



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

Data, Meet Compute: NASA's Cumulus Ingest Architecture

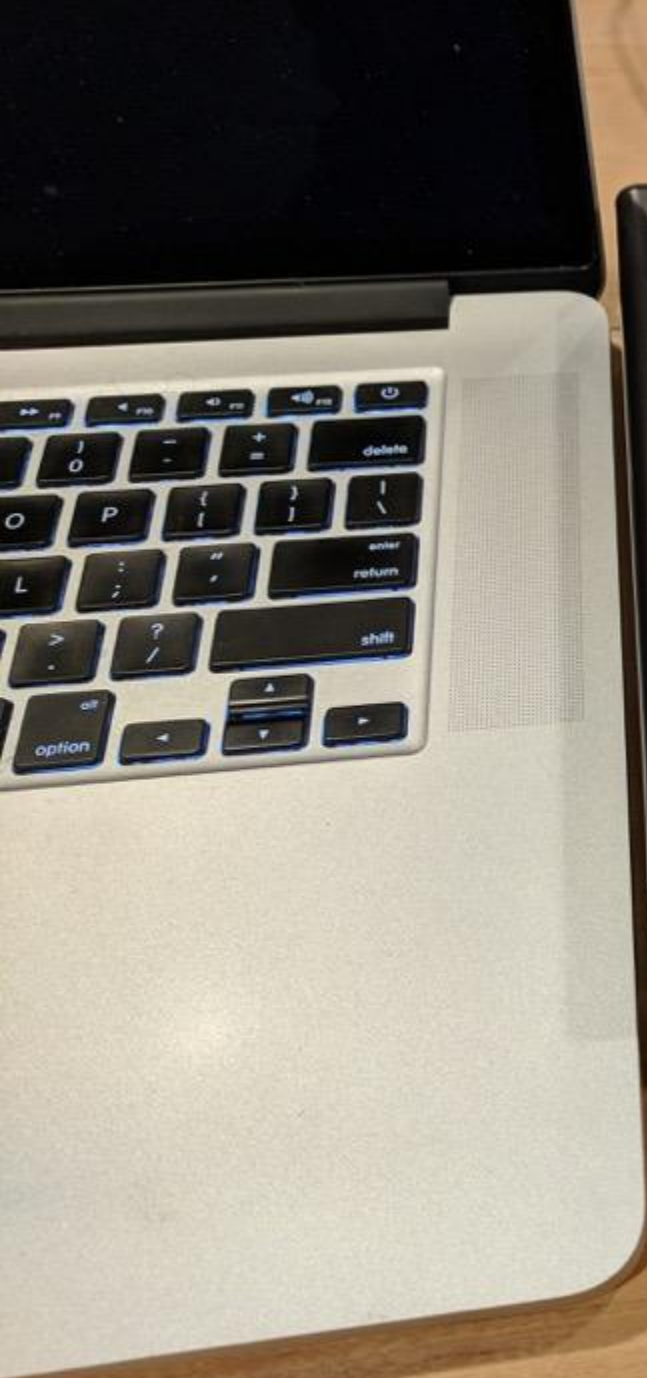
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Administration under Contract Number **NNG15HZ39C**

NASA Cumulus

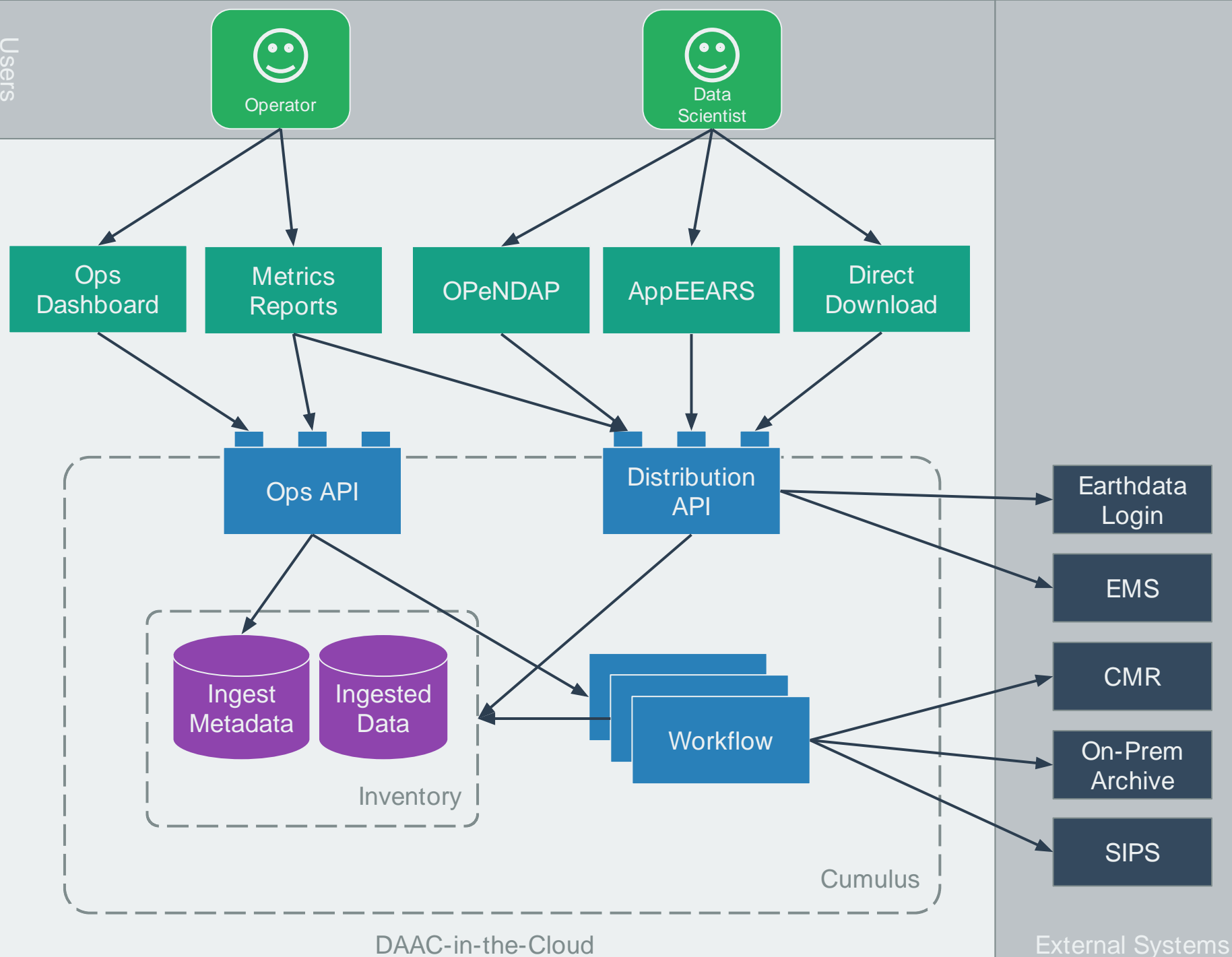
WHERE WE'RE GOING



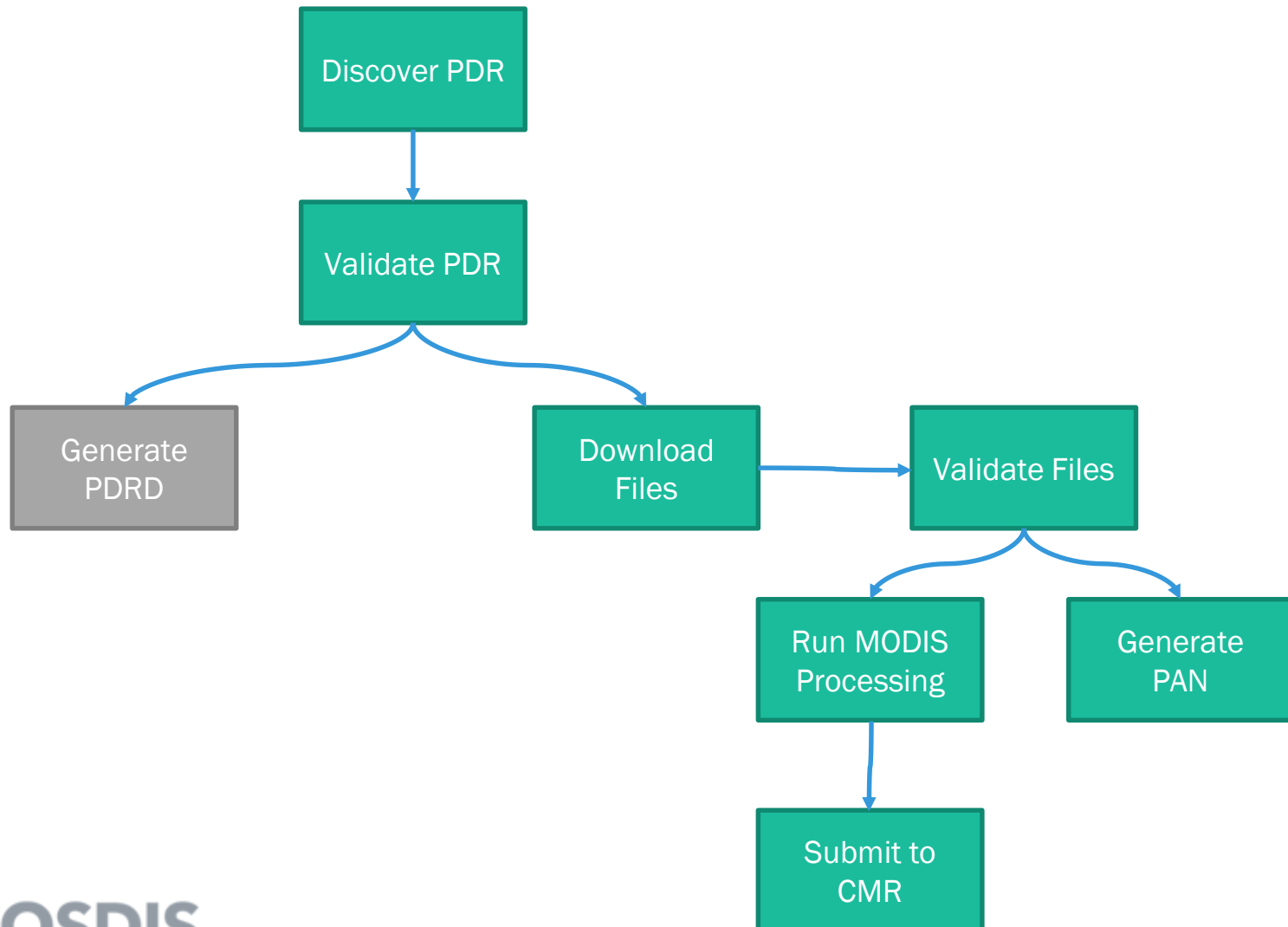


NASA Cumulus

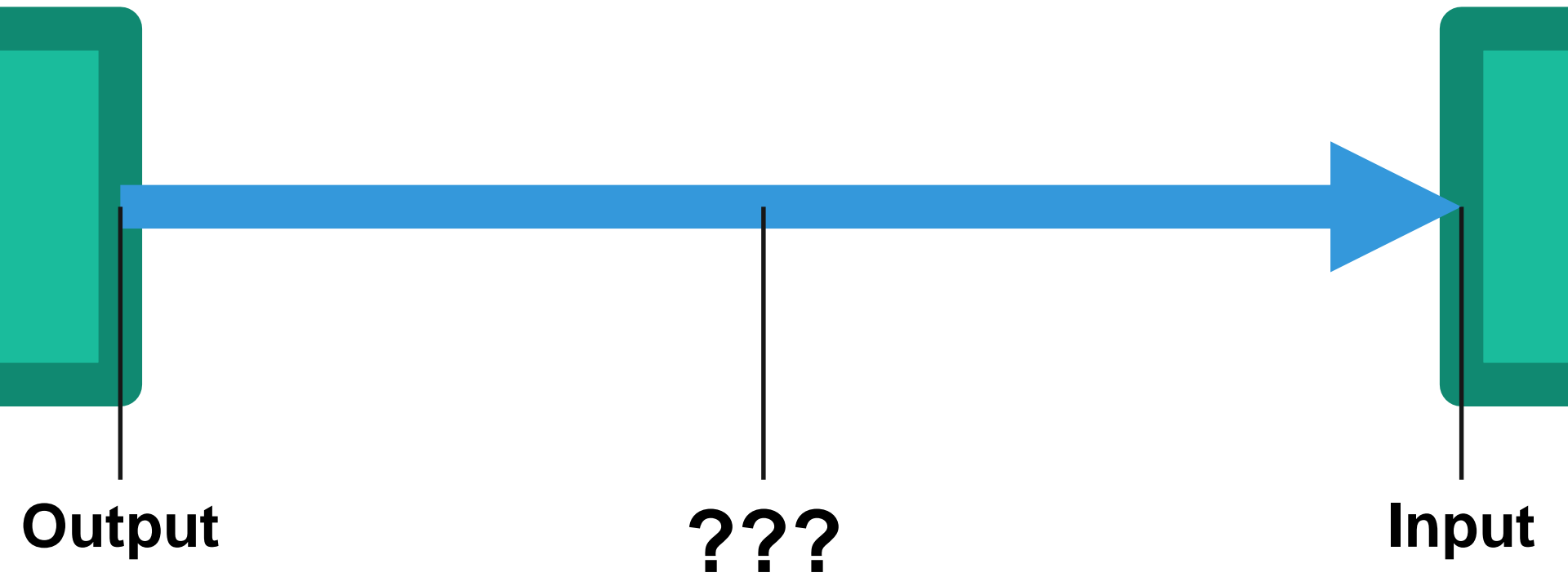
CUMULUS: DATA → CLOUD

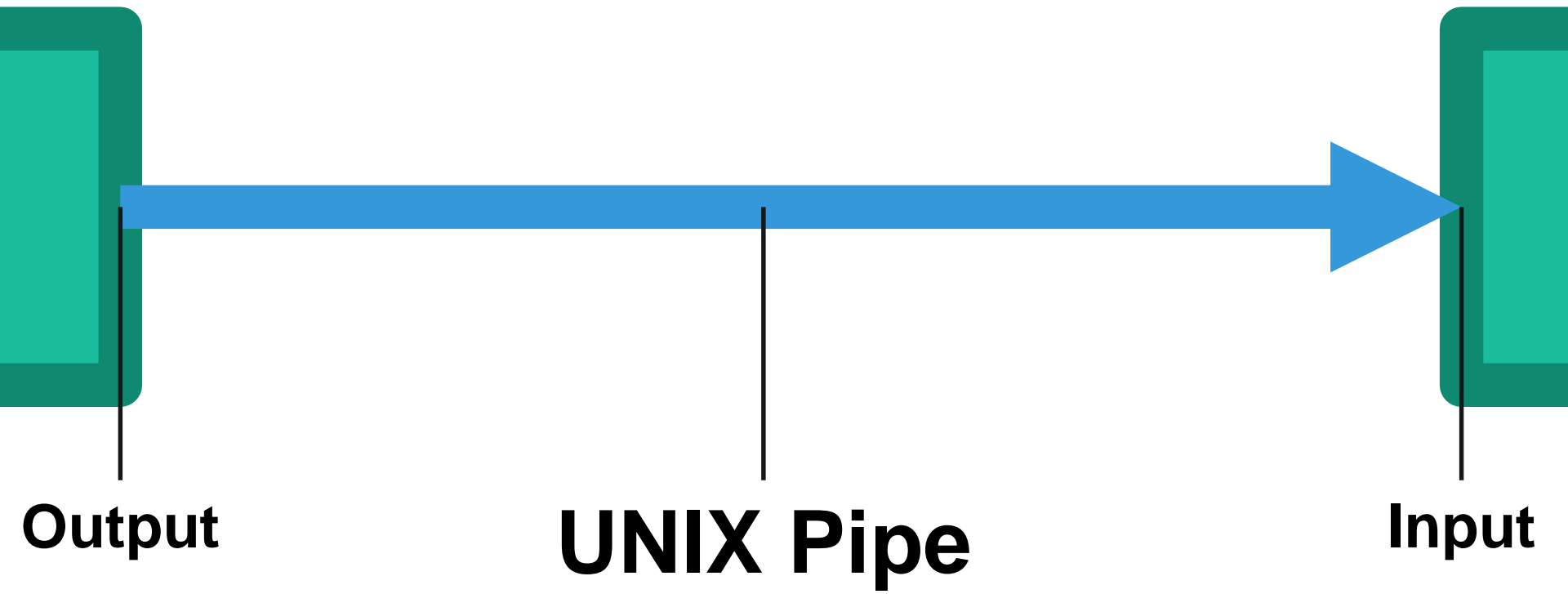


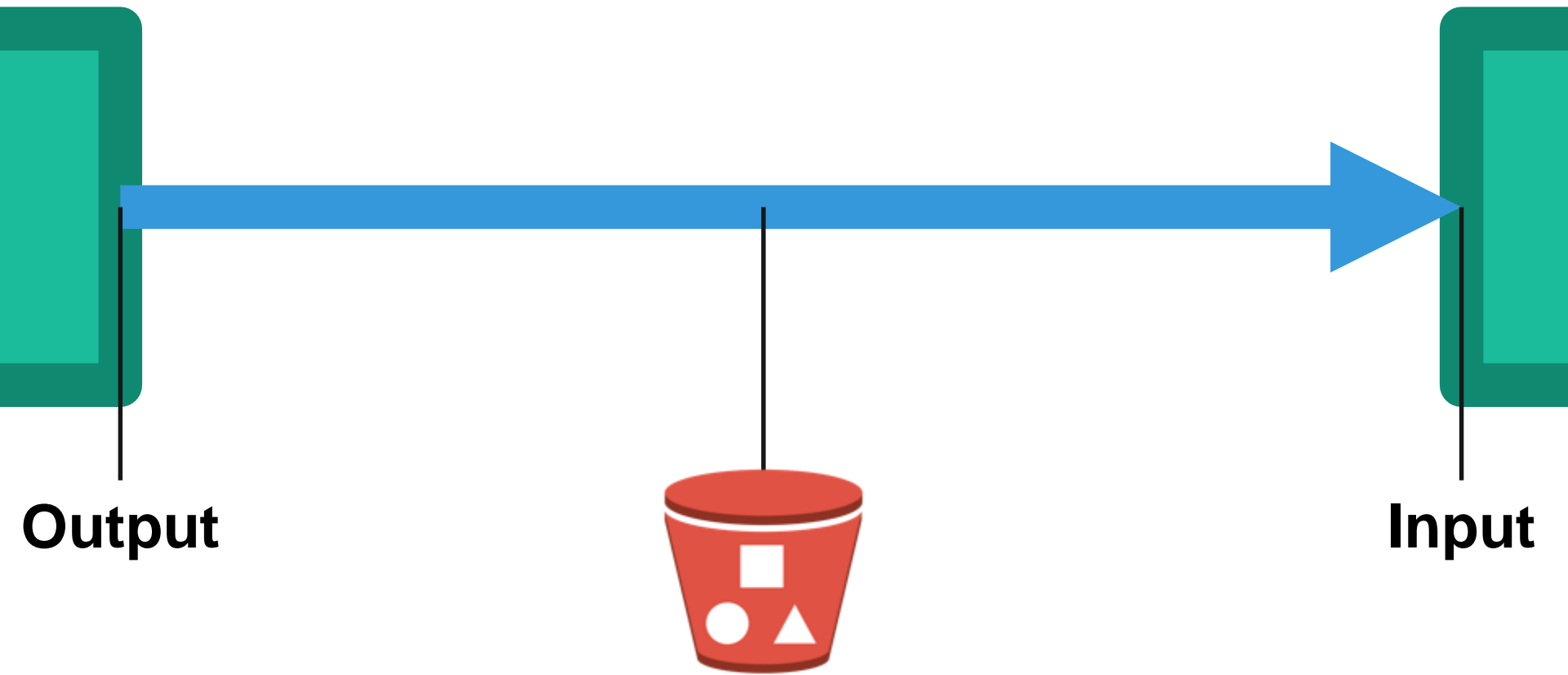
DAAC-Owned Workflows

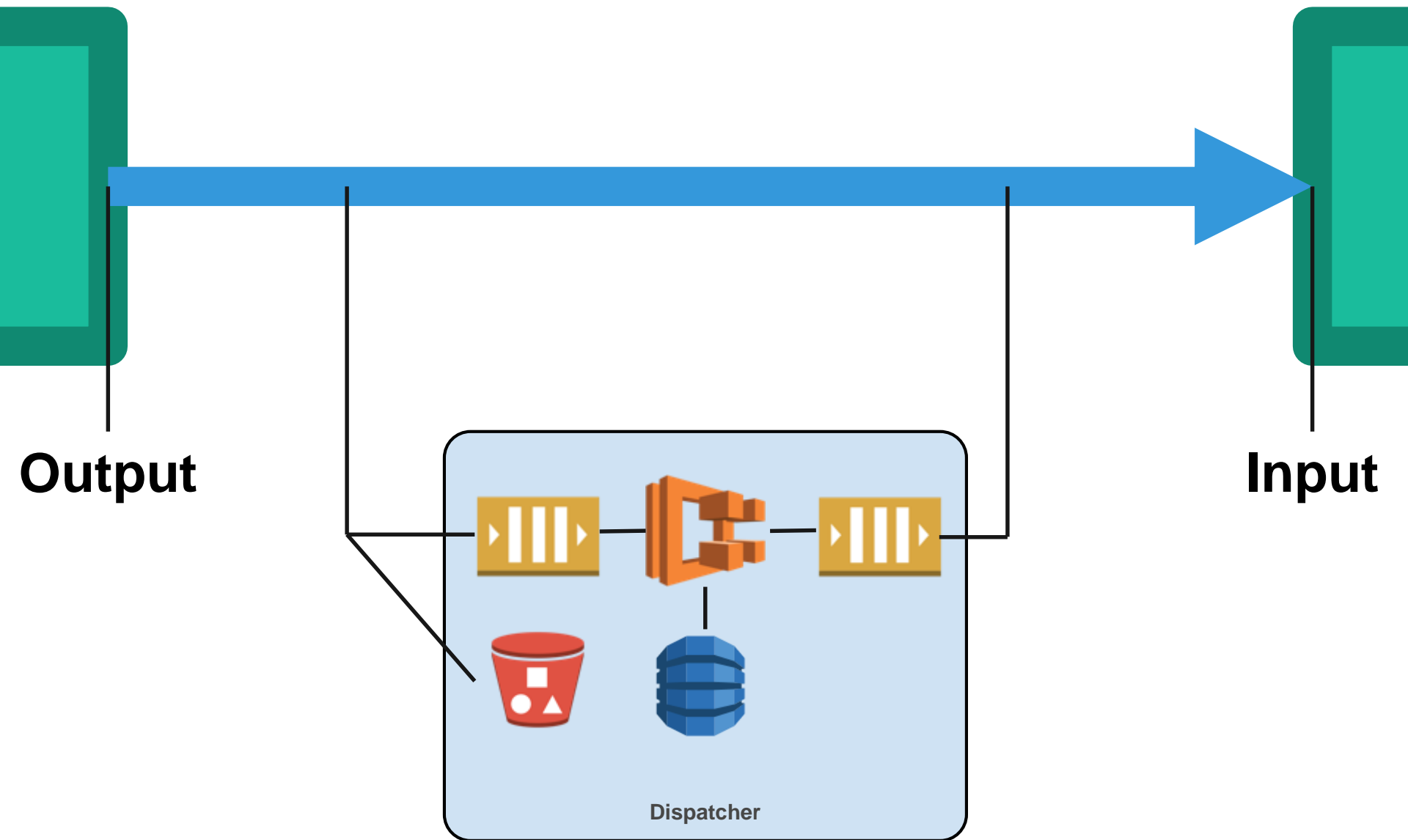


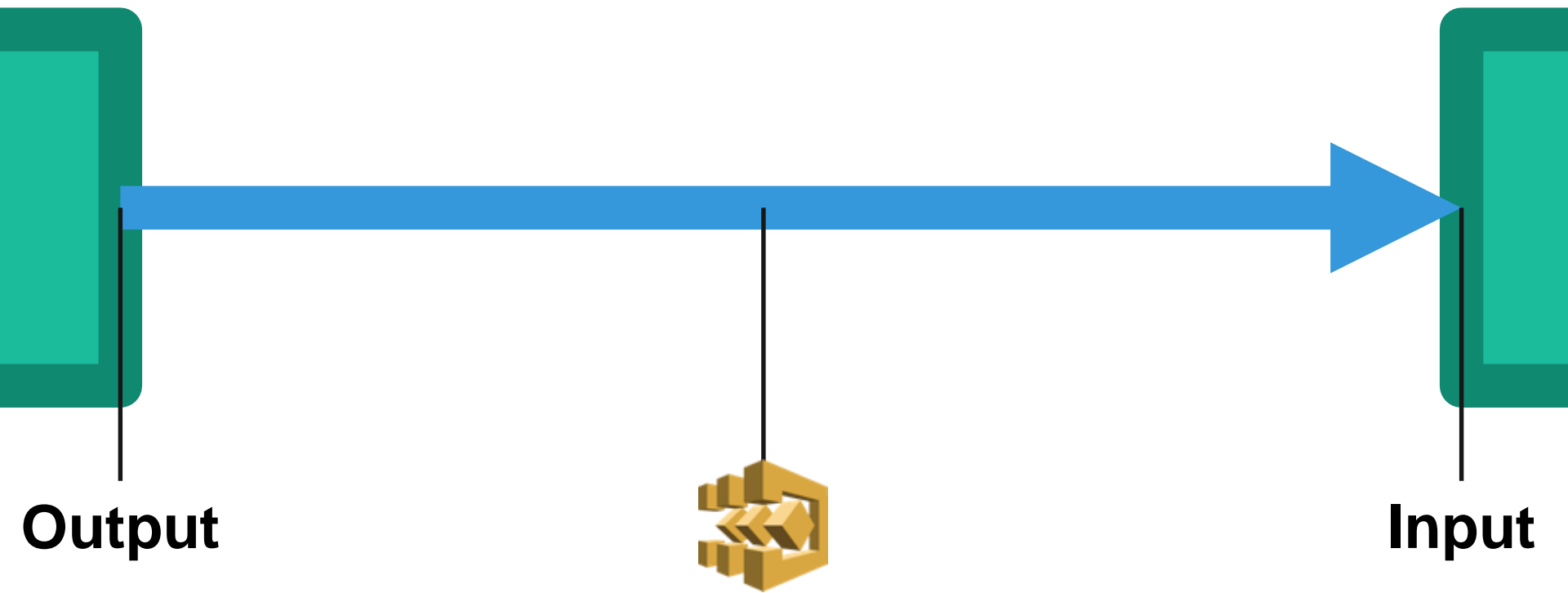


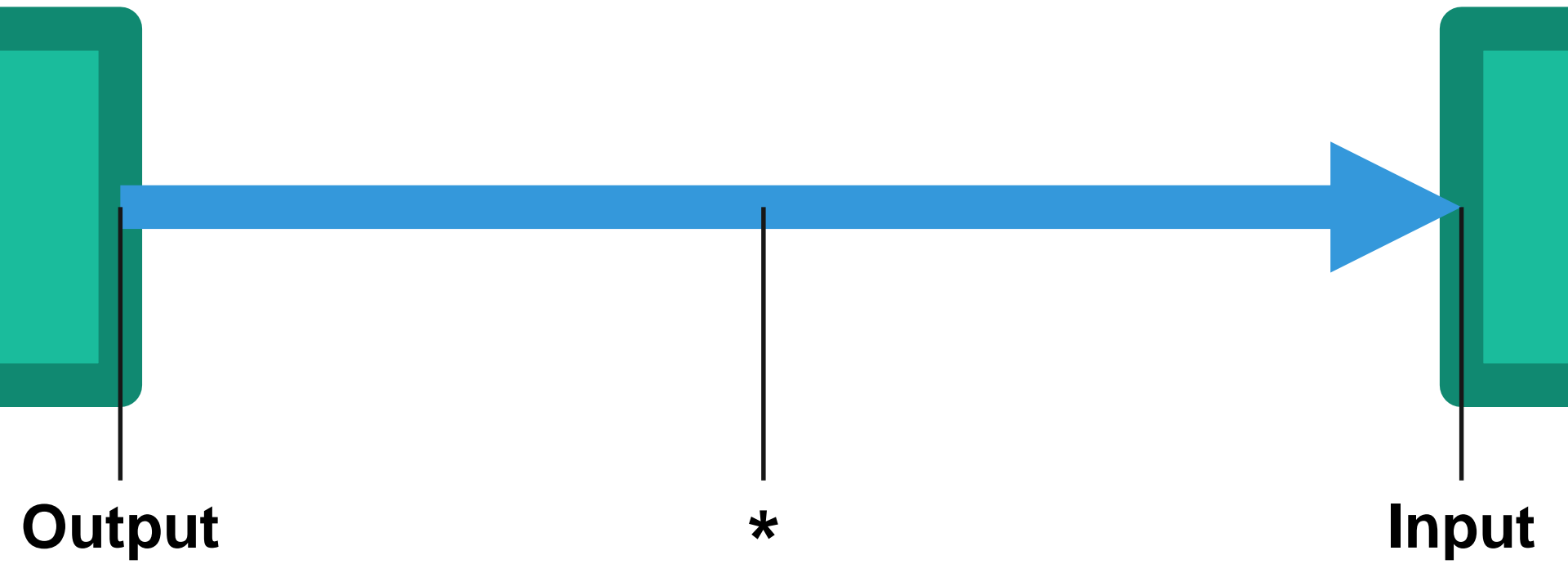




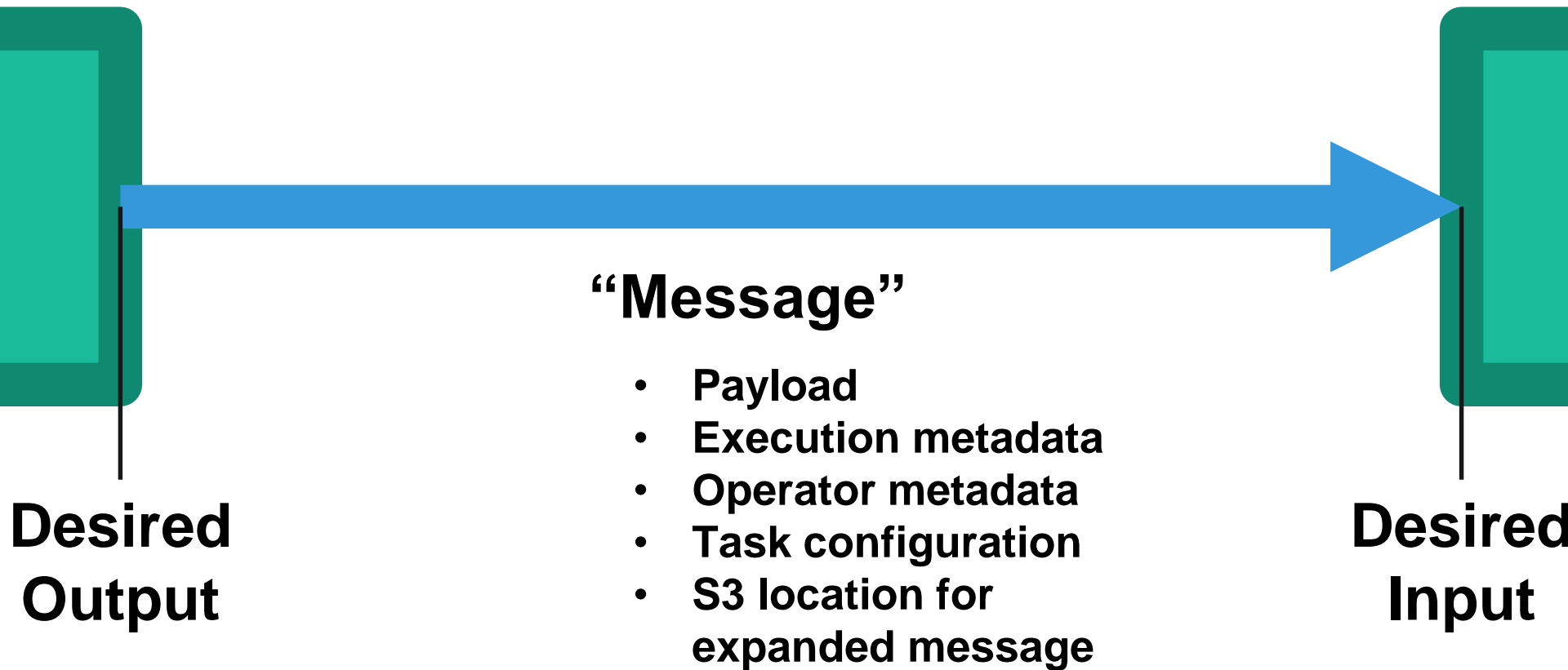


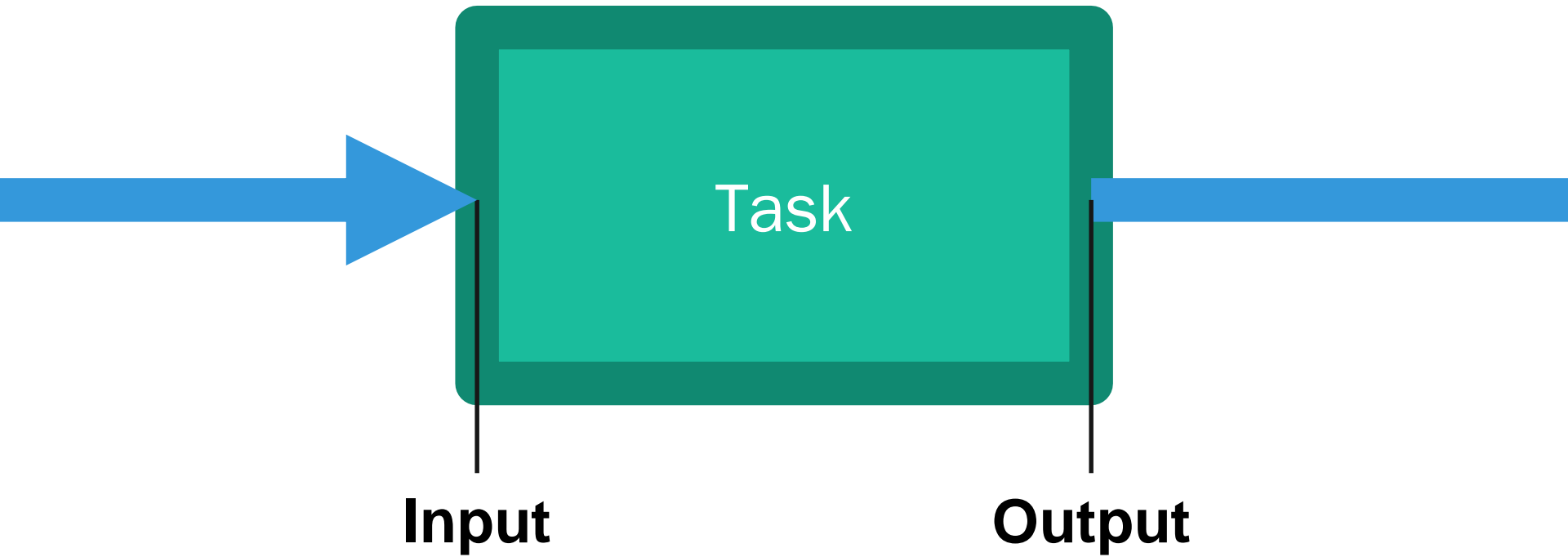


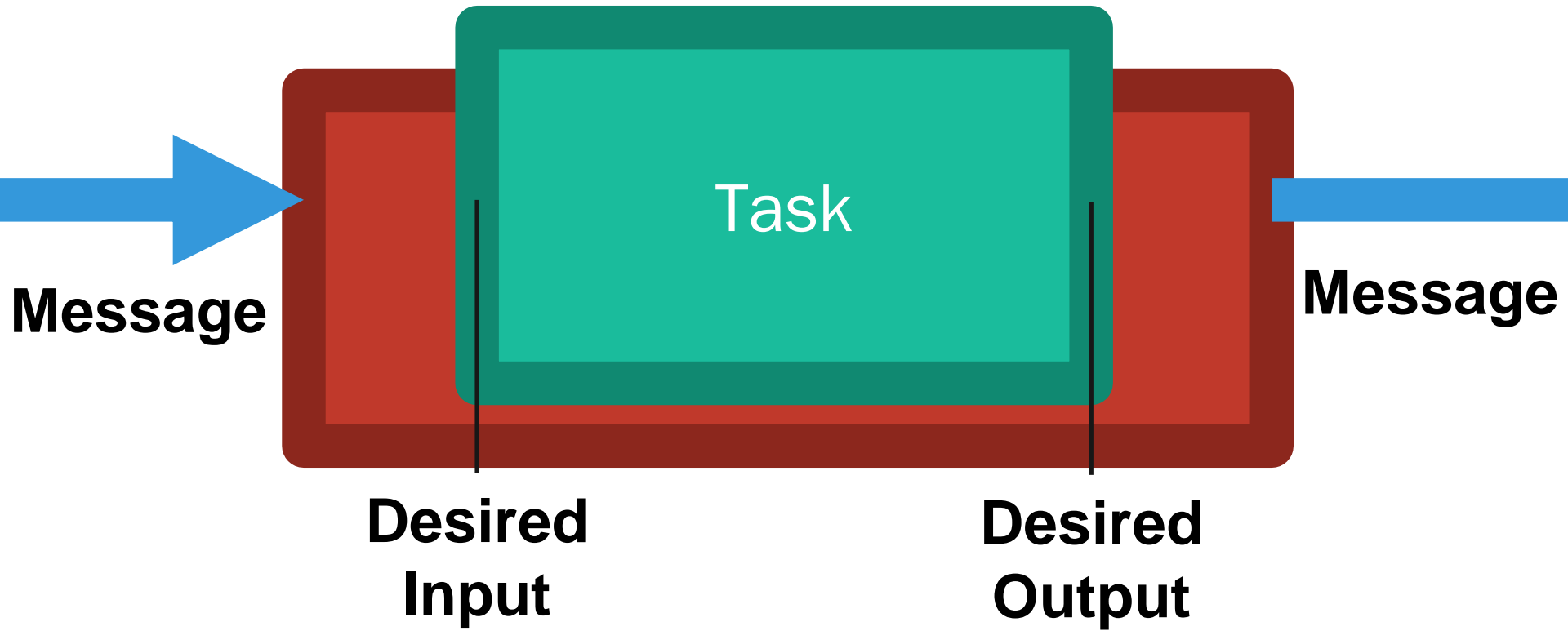


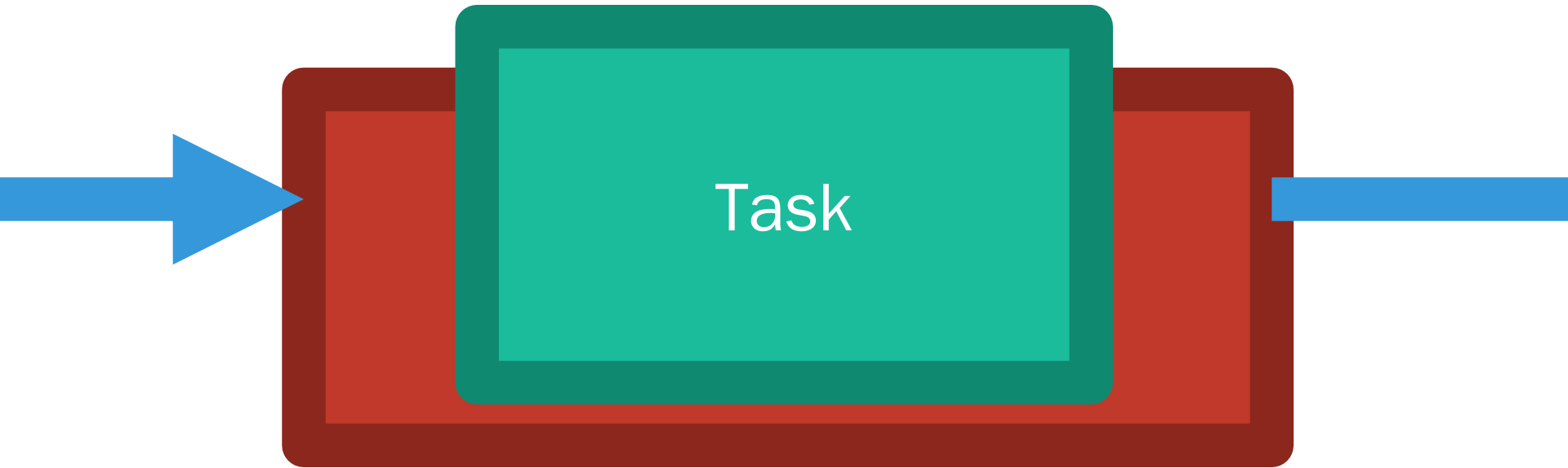








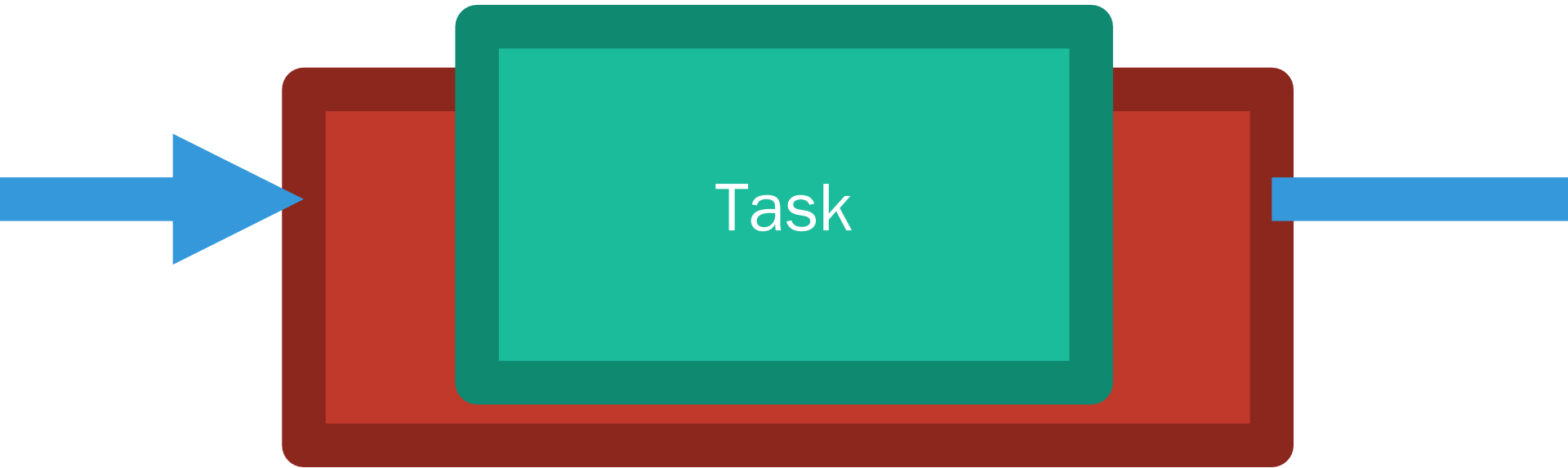




Cumulus Sled

- Conversion between message format and task inputs / outputs
- JSON Schema validation of inputs / outputs
- Configuration lookup
- Error reporting
- Message versioning and evolution





```
exports.handler = function handler(event, context, callback) {  
  console.log('Hello, Task!');  
  console.log('This is my input:', event.input);  
  console.log('This is my config:', event.config);  
  callback(null, event);  
};
```

Putting It Together

- Tasks are written as simple AWS Lambda functions, regardless of how they are run
- Inter-task messages can evolve separately from tasks
- Messages can be passed in multiple ways

Lessons Learned

- Decouple! Plan to connect components multiple ways
- Deploy with a minimal IAM role from the start
- Load test early and often and know the system's limits (there are some)
- Watch AWS Announcements!

It's Open Source!

- Main Repo:
github.com/cumulus-nasa/cumulus
- Deployment Example:
github.com/cumulus-nasa/template-deploy
- Docs:
cumulus-nasa.github.io

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QUESTIONS?

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THANK YOU!

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